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A Morphological Analysis of Malyshevo Middle Neolithic Pottery from the Lower Amur

We analyze the forms of clay vessels from the Malyshevo Middle Neolithic sites on the Lower Amur, and compare them with those relating to the contemporaneous Late Kondon culture of the same region and to the Boisman and Vetka cultures in Primorye, using V.F. Genning's methodology. On the basis of the results, a reconstruction of cultural contacts in the Russian Far East during the Middle Neolithic is attempted. On another level, H.A. Nordström's approach helps to reveal the "standard" forms of vessels. The closest parallels are those with the Boisman ceramics, whereas the Vetka vessels are the least similar.

Keywords: *Neolithic, Lower Amur, Malyshevo culture, ceramics, morphological analysis.*

Introduction

The Middle Neolithic period in the southern part of the Russian Far East is represented by the Malyshevo, Kondon, and Boisman cultures, and also by the Belkachi and Vetka cultural-chronological complexes (Medvedev, 2005; Popov, 2006; Shevkomud, Kuzmin, 2009) (Fig. 1). Despite the long history of the study of possible contacts between these cultures, the topic is still debated (Moreva, Batarshev, 2009). In research in the ancient intercultural contacts, great importance has always been given to ceramics (Shepard, 1965: 336-341; Arnold, 1989: 107-110; Kozhin, 1989; Zhushchikhovskaya, 1997, 2003; Tsetlin, 2012: 2, 40-251). According to some Russian and foreign scholars, classification and typology of ceramics is based on morphological features (Gifford, 1960; Grebenshchikov, Derevianko, 2001: 38; Mylnikova, 2014: 31–33). For instance, the outlines and shapes of vessels' parts may be regarded as indicators of the cultural affinity of ceramicware (Shepard, 1965: 224–248).

In Russian archaeology, there are three main approaches to the analysis of forms of clay vessels: 1) visual- and emotional-descriptive (M.G. Rabinovich, R.L. Rosenfeld, and others); 2) formal-classificatory (V.A. Gorodtsov, V.F. Gening, and others); 3) historical-cultural (A.A. Bobrinsky, Y.B. Tsetlin, and others) or experimental-technological (S.V. Saiko, I.G. Glushkov, and others). In addition, attempts have been made to elaborate new analytical methods, including those based on computer programs (V.G. Loman and others) (Gening, 1973; Bobrinsky, 1978, 1986; Glushkov, 1996: 110/1–110/3; Loman, 2006; Tsetlin, 2012: 142–169). Foreign scholars have mostly relied in their research on the so-called complex approach (Shepard, 1965: 225-255; Nordström, 1972: 72-73; Ericson, Stickel, l973; Hole, 1984; Orton, Hughes, 2013: 81-85), the initial stage of which is based on the "universal method" proposed by

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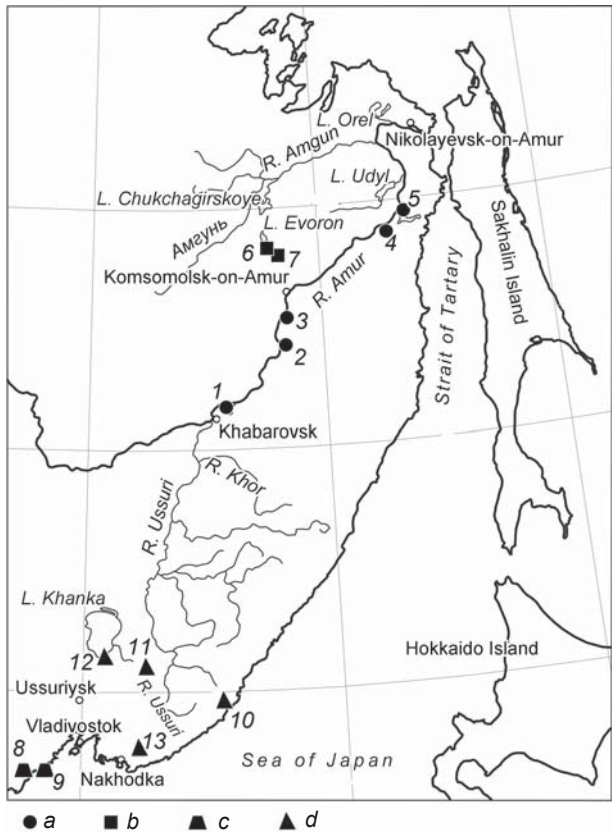

Fig. 1. Map showing location of the main Middle Neolithic sites in the southern regions of the Russian Far East.
a – Middle Malyshevo sites: *1* – Gasya; *2* – Innokentyevka; *3* – Voznesenskoye; *4* – Kalinovka; *5* – Suchu; *b* – Late Kondon sites: *6* – Kondon-Pochta; *7* – Kharpichan-4; *c* – Boisman sites: *8* – Boisman-1, *9* – Boisman-2; *d* – Vetka sites: *10* – Vetka-2, *11* – Sheklyaevo-7, *12* – Luzanova Sopka-2, *13* – Pereval.

G.D. Birkhoff (1933: 83–91). Archaeologists from Siberia and the Far East use various analytical techniques in their research, both Russian and foreign. For instance, L.N. Mylnikova has analyzed the vessels' morphology using the techniques proposed by I.P. Rusanova, V.F. Gening, A.A. Bobrinsky, Y.B. Tsetlin, A.O. Shepard, and H.A. Nordström (Mylnikova, 1999: 48–55; 2014: 36–42; Molodin, Mylnikova, Ivanova, 2014; Mylnikova, Selin, 2015: 114–116).

Despite the lack of general methodology, morphological analysis of the Malyshevo ceramics and their comparison with the Lower Amur and Primorye vessels will provide additional information for Neolithic studies in the southern part of the Russian Far East.

Material and methods

The present study focuses on the ceramic collections from various Malyshevo sites, gathered during excavations in various years (Derevianko et al., 2000: 4–5; 2002: 8–10). Currently, these materials are stored in the Institute of Archaeology and Ethnography of SB RAS (Novosibirsk). The author also analyzed the published data on the Lower Amur (Mylnikova, 1999: 48–56; Shevkomud, 2003; Shevkomud, Kuzmin, 2009) and Primorye (Zhushchikhovskaya, 1998; Popov, Chikisheva, Shpakova, 1997: 30–32; Moreva, 2003; Moreva, Popov, 2003; Moreva, Batarshev, Popov, 2008; Batarshev, Dorofeeva, Moreva, 2010) ceramics. We have measured 152 specimens: 78 intact and reconstructed vessels, 16 upper and lower parts, and 58 upper parts*.

The ceramics' morphology was analyzed using Gening's statistical approach, based on the main parameters of the vessels: rim diameter, neck-base diameter, maximal body diameter, base diameter, total height, neck height, shoulder height, and base height (1973). Subtypes have been identified by the shape of the vessel's upper part and the whole vessel's outline. The procedure proposed by Nordström was also applied. His method is based on calculation of the proportion of half-maximal diameter to height from the vessel's base, at which height this diameter is located; and also on the drawing and superposition of semi-profiles of vessels and their graphic models, generated by connection of extreme points, onto one another, with all semi-profiles brought to a standard height (1972: 72–73).

Results

The forms of the Middle Malyshevo vessels have all been subdivided into two main groups: without necks (111 spec.) and with necks (41 spec.). Each group contains open (20 spec.) and closed (132 spec.) forms. The indices of forms, calculated using Gening's statistical methodology*, are given in Tables 1 and 2.

Within the subgroup of open vessels without necks (3 spec., which corresponds to 8.5 % of the whole sample: eight intact vessels, upper and lower parts belonging to two vessels, and three upper parts), seven types of vessels have been identified (Fig. 2). The vessels have not been further classified by the shape of service parts, yet types 6 and 7 have been subdivided into two subtypes by their outlines. In general, this subgroup is homogenous, owing to a special rim-design. Superposition of the semi-profiles of vessels and their graphic models onto one another has

*The upper and lower parts of one vessel have been counted as one specimen.

*Neck height index (NHI) and neck profile index (NPI) have been determined only for vessels with necks.

Table 1. **Indices of forms of the vessels without necks of the Middle Malyshevo culture**

Index	Vessels of open types							Vessels of closed types					
	Type 1 (n=1)	Type 2 (n=1)	Type 3 (n=5)	Type 4 (n=1)	Type 5 (n=1)	Type 6 (n=2)	Type 7 (n=2)	Type 3 (n=8)	Type 4 (n=12)	Type 5 (n=1)	Type 6 (n=25)	Type 7 (n=28)	Type 8 (n=24)
Height (HI)	0.10	0.43	0.33–0.57	0.56	0.77	0.81–0.87	0.91–0.92	0.40–0.55	0.51–0.82	0.68	0.59–1.14	0.18–1.10	0.43–1.00
Neck breadth (NBI)	1.10	1.00	0.99–1.04	0.99	1.01	1.00–1.02	1.00–1.02	0.91–1.01	0.84–1.00	0.95	0.85–1.00	0.72–1.01	0.35–0.99
Body height (BHI)	0.10	0.43	0.33–0.68	0.56	0.77	0.81–1.00	0.91–0.92	0.40–0.55	0.51–0.82	0.61	0.59–1.14	0.18–1.10	0.43–1.00
Shoulder height (SHI)	1.25	0.50	0.45–0.67	0.51	0.38	0.36–0.78	0.33–0.35	0.17–0.67	0.20–0.71	0.81	0.15–0.91	0.10–0.86	0.34–0.90
Shoulder convexity (SCI)	0.00	0.00	0.00–0.10	0.00	0.00	0.00–0.07	0.00	0.00–0.25	0.00–0.11	0.01	0.00–0.07	0.00–0.28	0.04–0.93
Base width (BWI)	0.00	0.35	0.90–1.49	–	–	0.39–0.57	0.16–0.44	0.50–0.86	0.50–0.98	–	0.24–0.90	0.14–0.53	0.22–1.00

Note: Numbering of the vessel types identified in the first subgroup is maintained.

Table 2. **Indices of forms of the vessels with necks of the Middle Malyshevo culture***

Index	Vessels of open types				Vessels of closed types	
	Type 2 (n=1)	Type 3 (n=2)	Type 4 (n=2)	Type 5 (n=3)	Type 2 (n=14)	Type 3 (n=20)
Height (HI)	0.81	1.03–1.19	0.88–1.03	0.97–1.12	0.69–0.91	0.90–1.50
Neck height (NHI)	1.55	1.77–3.24	5.69–7.00	1.19–1.77	0.87–3.33	1.03–7.21
Neck breadth (NBI)	1.04	1.08–1.15	1.02–1.08	0.99–1.08	0.76–1.02	0.64–0.97
Neck profile (NPI)	0.06	0.21–0.25	0.01–0.03	0.06–0.25	–0.67–0.08	–0.17–0.13
Body height (BHI)	0.79	0.99–1.09	0.88–1.03	0.97–1.12	0.69–0.91	0.52–2.10
Shoulder convexity (SCI)	0.75	0.45–0.84	2.33–2.37	0.23–0.45	0.27–1.14	0.25–1.51
Shoulder curvature (FG)	–0.02	0.02–0.07	–0.04–0.02	0.02–0.05	–0.11–0.32	0.03–0.61
Base width (BWI)	–	0.46	0.27–0.63	0.56–0.73	0.16–0.71	0.35–0.78

*See note for Table 1.

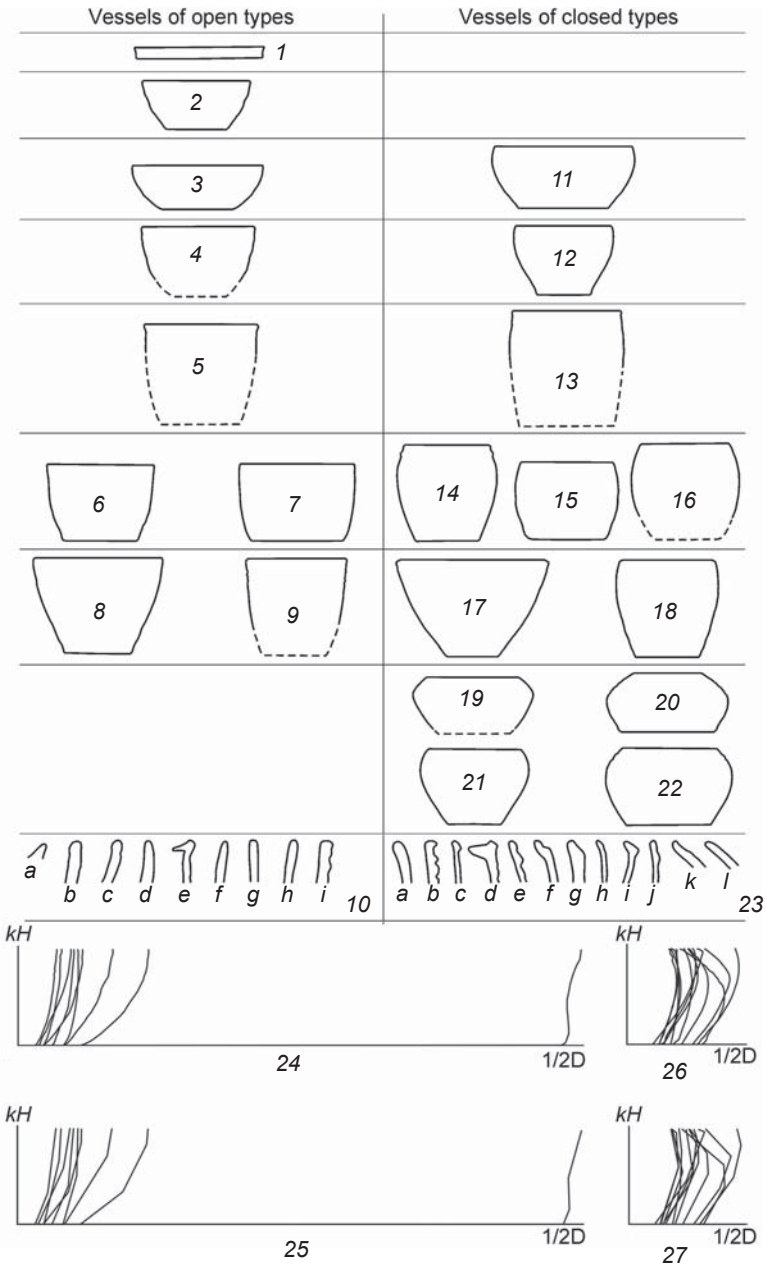

Fig. 2. Shapes of vessels without necks of the Middle Malyshevo culture.
1–9, *11–22* – outlines; *10*, *23* – rim profiles; *24*, *26* – semi-profiles of vessels; *25*, *27* – vessel models.
1–7, *9*, *10a–c, g–i*, *11*, *13*, *15*, *17*, *18*, *20–22*, *23a, c, d, f–l* – Suchu; *8* – Innokentyevka; *12*, *23b* – Kondon-Pochta; *10d*, *19* – Voznesenskoye; *10e, f*, *14*, *16*, *23e* – Gasya.

shown the absence of "standard" forms; yet the trend towards such a standard has been detected, because deviations in the shapes of some vessels were associated, not with their general proportions, but with their width.

Within the subgroup of closed vessels without necks (98 spec., or 64.5 %: 49 intact vessels, upper and lower parts belonging to nine vessels, and 40 upper parts), six types of vessel have been identified (Fig. 2). Types 6 and 7 have been further subdivided into subtypes by the shape of their service parts; types 6, 7, and 8 include subtypes by their outline features. Ceramics of this subgroup are also rather similar, again mostly because of the rim-design. The superposition of the semi-profiles of vessels and their graphic models has shown the absence of "standard" forms, as in the first subgroup, while the trend towards such standard forms has been noted.

In general, the open and closed vessels without necks (73 %) are medium, low, or very low vessels with narrow, medium, wide, or very wide mouths. Their bodies are round, squat, or very squat, with medium, high, or very high shoulders showing moderate, gentle, or very gentle convexity. Their bases are flat, medium, wide, or very wide. "Standard" vessels are absent.

The subgroup of open vessels with necks (7 spec.; 4.6 %; five intact vessels and two upper parts) has been subdivided into four types (Fig. 3). Type 2 was classified into two subtypes by the shape of service parts, and into two subtypes by the vessel's outline. The subgroup includes flat-based and round-based vessels. The superposition of the semi-profiles of vessels and their graphic models onto one another has revealed certain features of the semi-profile of the "standard" vessel. Within the subgroup of closed vessels with necks (34 spec., or 22.4 %: 16 intact vessels, upper and lower parts belonging to five vessels, and 13 upper parts), two types of vessels have been identified (Fig. 3). Both types have been further subdivided into three subtypes by the shape of service parts. Classification by the outline is as follows: the first type was subdivided into five subtypes, the second type into six. Superposition of semi-profiles of vessels and their graphic models onto one another has shown that despite of deviations to the left and to the right, the predominant "ideal" shape, shown in the center, is clearly evident.

In general, vessels with necks of open and closed forms (27 % of the total) are low, medium, high, or very high vessels. These have low, medium, high, or very high, wide or very wide necks; with the necks inclined inward or gently profiled; their bodies are squat, round, or very elongated; their shoulders are very low, low, medium,

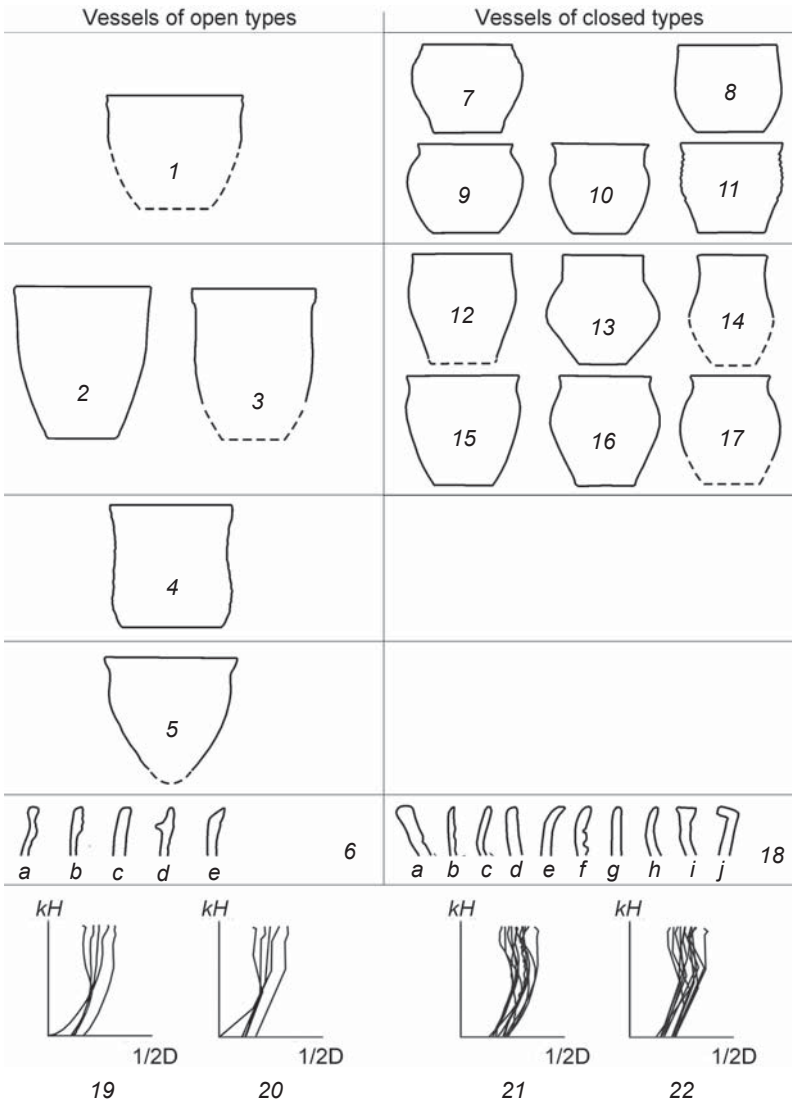

Fig. 3. Shapes of vessels with necks of the Middle Malyshevo culture.
1–5, *7–17* – outlines; *6*, *18* – rim profiles; *19*, *21* – semi-profiles of vessels; *20*, *22* – vessel models.
1, *3*, *5*, *6a, b, e*, *7–17*, *18a–j* – Suchu; *2*, *6c* – Voznesenskoye; *4*, *6d* – Gasya.

or high, medium-convex, gently convex, or very gently convex. Bases are flat or round, medium, wide, or very wide. The "standard" vessel is recognized within the subgroup of the closed vessels.

Correlation of all indices enabled identification of the main features of the forms of Middle Malyshevo pottery:

1) in terms of height index (HI): low and medium;

2) in terms of neck height index (NHI): low, medium, high, and very high;

3) in terms of neck breadth index (NBI): medium, broad, and very broad;

4) in terms of neck profile index (NPI): inclined inward and gently profiled;

5) in terms of body height index (BHI): squat and round;

6) in terms of shoulder height index (SHI): medium, high, and very high;

7) in terms of shoulder convexity index (SCI: medium-convex, gently convex, and very gently convex; and

8) in terms of base width index (BWI): medium, wide, and very wide.

Superposition of semi-profiles of vessels and their graphic models onto one another has shown that while the vessels without necks only tended towards "standard" form, those with necks (of closed type) partially already demonstrated such a form.

Comparison of the data obtained from morphological analysis of the ceramicware of the Early (Filatova, 2015) and Middle Malyshevo culture has shown both similarities and differences. However, the differences are not consistent, because they have not been identified in all subgroups. Comparison of the indices (Table 3) has shown coincidences in the majority of indicators. Differences have been noted only in vessels with high necks (NHI) and with very low shoulders (SHI). The complete coincidence has been noted for the neck breadth index (NBI) and neck profile index (NPI). Notably, the mentioned parts of the vessels indicate the cultural affinity of the objects. In our opinion, this points to the continuity and the intrinsic development of the pottery tradition. Superposition of semi-profiles of vessels and their graphic models onto one another also indicates the definite proximity of the Early and Middle complexes of Malyshevo culture. The greatest similarity has been recorded in the group of the closed vessels with necks. Certain similar features have also been noted in the rim shaping.

Comparison of the Malyshevo ceramics with those of the Kondon, Boisman, and Vetka materials has shown certain similarity in their morphology (Fig. 4). The Late Kondon and Vetka ceramics reveal the closest similarity to the Malyshevo vessels without necks. Malyshevo vessels with necks have parallels with the Kondon and Boisman ceramics. In sum, in terms of morphology, the most similar to the Malyshevo ceramics is the Boisman pottery, then the Kondon, while the least similar is the Vetka pottery. Superposition of semi-profiles of vessels and their graphic models onto one another has also shown

Table 3. **Indices of shape characteristics of the vessels of the Early and Middle Malyshevo culture**

Index		Early Malyshevo	Middle Malyshevo
HI	0.41–0.80	Low (0.62–0.74)	Low (0.43–0.77)
	0.81–1.20	Medium (0.81–1.16)	Medium (0.81–1.19)
	1.21–1.60	High (1.32–1.50)	High (1.50)
NHI	0.51–1.50	Low neck (0.94–1.40)	Low neck (0.87–1.19)
	1.51–3.00	Medium neck (1.67–2.06)	Medium neck (1.55–1.77)
	3.01–5.00	High neck (3.57)	High neck (3.23–3.24)
NBI	0.66–1.00	Broad (0.93–1.00)	Broad (0.66–1.00)
	>1.00	Very broad (1.01–1.08)	Very broad (1.01–1.15)
NPI	<0.00	Inclined inward (0.00)	Inclined inward (–0.67–0.00)
	0.01–0.26	Gently profiled (0.03–0.25)	Gently profiled (0.01–0.25)
BHI	0.50–0.85	Squat (0.62–0.82)	Squat (0.50–0.85)
	0.86–1.15	Round (0.88–1.07)	Round (0.86–1.15)
SHI	>2.00	Very low (2.25)	Very low (2.33–2.37)
	0.50–1.00	Medium (0.53–1.00)	Medium (0.50–1.00)
	0.26–0.50	High (0.26–0.40)	High (0.26–0.50)
SCI	<0.25	Very gently convex (0.00–0.24)	Very gently convex (–0.11–0.25)
	0.26–0.57	Gently convex (0.28)	Gently convex (0.27–0.54)
	0.58–1.00	Medium convex (0.91)	Medium convex (0.61–0.93)
BWI	0.57–1.00	Medium (0.60)	Medium wide (0.57–1.00)
	0.25–0.56	Wide (0.25–0.55)	Wide (0.26–0.56)
	<0.25	Very wide (0.09–0.17)	Very wide (0.00–0.24)

the closeness of the Lower Amur and Primorye ceramics. Certain parallels have been noted in the rim-designs, too. Thus, comparative analysis of the Amur and Primorye ceramic materials suggests various degrees of similarity in the morphology of the Middle Neolithic vessels from the southern regions of the Russian Far East.

Conclusions

Study of the Middle Malyshevo ceramics using Gening's methodology has revealed both common and specific features in the morphology of the clay vessels, and has suggested the main features of their modeling tradition. In general, two main forms have been identified. These are the closed flat-based vessels with or without necks. The presence of open vessels (with or without necks) likely suggests the attempts to produce certain "intermediate" variants between the two main forms. This assumption is supported by the observed scarcity of the open vessels. This situation apparently implies not only the internal development of the pottery tradition, but also the external influence. Nordström's methodology allowed us to identify the trends towards formation of the "standard" forms in the pottery tradition of the Late Malyshevo people, which also indicates their attempts to develop some "intermediate" forms.

Correlation of the Malyshevo ceramics with the Kondon, Boisman, and Vetka suggests cultural contacts

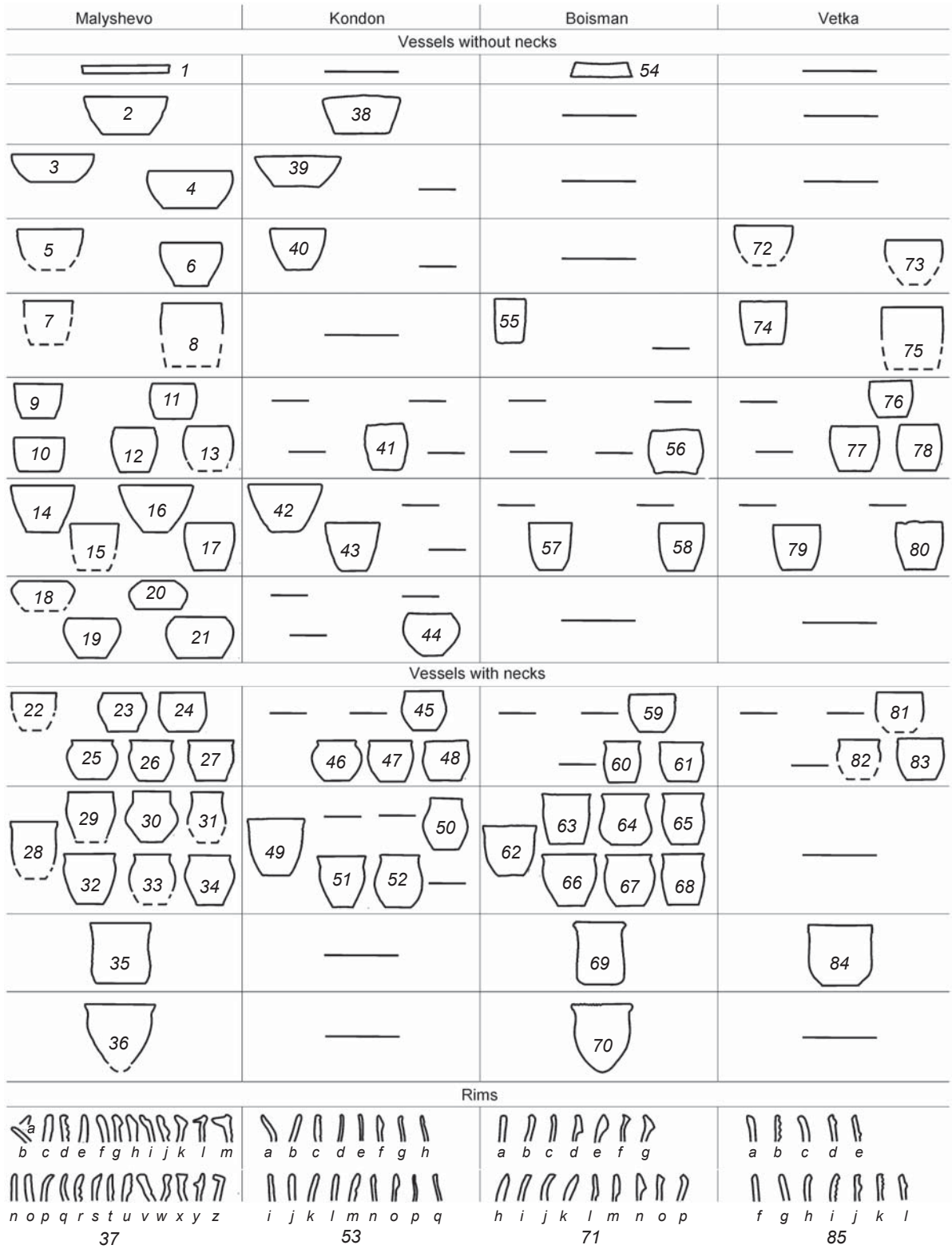

Fig. 4. Middle Neolithic vessels from the Lower Amur and Primorye.

1–36, *38–52*, *54–70*, *72–84* – outlines; *37*, *53*, *71*, *85* – rim profiles.

Malyshevo culture: *1–5*, *7–11*, *15-17*, *19-34*, *36*, *37a–c, f–i, k, m–x, z* – Suchu, *6*, *37d* – Kondon-Pochta, *12*, *13*, *35*, *37j, l, y* – Gasya; *14* – Innokentyevka; *18*, *37e* – Voznesenskoye; Kondon culture: *38–52, 53a–q* – Kondon-Pochta; Boisman culture (after: Zhishchikhovskaya, 1998; Moreva, 2003; Moreva, Popov, 2003; Popov, Chikisheva, Shpakova, 1997)): *54*, *57–70, 71a–p* – Boisman-2, *55*, *56* – Boisman-1; Vetka culture (after (Batarshev, Dorofeeva, Moreva, 2010)): *72*, *74*, *76*, *80*, *81*, *83*, *85a, c–l* – Vetka-2, *73*, *84*, *85b* – Boisman-2, *75* – Luzanova Sopka-2, *77*, *79*, *82* – Sheklyaevo-7; *78* – Pereval.

of various degrees. In the case of the Malyshevo and Boisman people, the most probable explanation is the constant interaction between them. Their long-term contacts are suggested by occurrences of the Boisman ceramics in the Malyshevo sites (Moreva, Batarshev, 2009). A comparatively smaller mutual influence existed between the Malyshevo, Kondon, and Vetka tribes.

Thus, comparative analysis of the Lower Amur and Primorye materials has shown similarities and differences at various levels: developmental, regional, and cultural. The established parallels are: 1) predominance of closed forms (developmental); 2) trend towards prevalence of vessels with necks (regional); and 3) intratypic variation of closed vessels with necks (cultural). The distinction is represented by the dominance of vessels with closed mouths and without necks in the Middle Malyshevo complex.

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References

Arnold D.E. 1989

Ceramic Theory and Cultural Process. Cambridge, New York: Cambridge Univ. Press. (New studies in archaeology).

Batarshev S.V., Dorofeeva N.A., Moreva O.L. 2010

Plastinchatiye kompleksy v neolite Primorya (genezis, khronologiya, kulturnaya interpretatsiya). In *Priotkryvaya zavesu vremeni: K 80-letiiu Zhanny Vasilievny Andreyevoy*. Vladivostok: Reya, pp. 102–156.

Birkhoff G.D. 1933

Aesthetic Measure. Cambridge, Harvard: Univ. Press, pp. 83–91.

Bobrinsky A.A. 1978

Goncharstvo Vostochnoy Evropy. Moscow: Nauka.

Bobrinsky A.A. 1986

O metodike izucheniya form glinyanoy posudy iz arkheologicheskikh raskopok. In *Kultury Vostochnoy Yevropy I tysyacheletiya*. Kuybyshev: Izd. Kuybysh. Gos. Univ., pp. 137–157.

Derevianko A.P., Cho You-Jeon, Medvedev V.E., Kim Seong Tae, Yoon Kun-il, Hong Hyung Woo, Jeong Suk-bae, Kramintsev V.A., Kang In Uk, Laskin A.R. 2000

Otchet o raskopkakh na ostrove Suchu v Ulchskom raione Khabarovskogo kraya v 2000 g. Seoul: Munhwajaechyeong. (In Russian and Korean).

Derevianko A.P., Cho You-Jeon, Medvedev V.E., Yoon Kun-il, Hong Hyung Woo, Jeong Suk-bae, Kramintsev V.A., Medvedeva O.S., Filatova I.V. 2002

Issledovaniya na ostrove Suchu v Nizhnem Priamurye v 2001 godu. Seoul: Gos. Issled. Inst. kulturnogo naslediya Respubliki Korei. (In Russian and Korean).

Ericson J.E., Stickel G.E. 1973

A proposed classification system for ceramics. *World Archaeology*, vol. 4 (3): 357–367.

Filatova I.V. 2015

Morphological analysis of ceramic vessels of the Malyshevo Neolithic culture early complex (Lower Amur region). *Austrian Journal of Humanities and Social Sciences*, No. 9/10: 3–11.

Gening V.F. 1973

Programma staticheskoy obrabotki keramiki iz arkheologicheskikh raskopok. *Sovetskaya arkheologiya*, No. 1: 114–136.

Gifford J.C. 1960

The type-variety method ceramics classification as an indicator of cultural phenomena. *American Antiquity*, vol. 25 (3): 341–347.

Glushkov I.G. 1996

Keramika kak arkheologicheskiy istochnik. Novosibirsk: Izd. IAE SO RAN.

Grebenshchikov A.V., Derevianko E.I. 2001

Goncharstvo drevnikh plemen Priamurya (nachalo epokhi rannego zheleza). Novosibirsk: Izd. IAE SO RAN.

Hole F. 1984

Analysis of structure and design in prehistoric ceramics. *World Archaeology*, vol. 15(3): 326–347.

Kozhin P.M. 1989

Znacheniye keramiki v izuchenii drevnikh etnokulturnykh protsessov. In *Keramika kak istoricheskii istochnik*. Novosibirsk: Nauka, pp. 54–70.

Loman V.G. 2006

Kompyuternaya programma dlya analiticheskogo izucheniya form keramicheskikh sosudov. In *Sovremenniye problemy arkheologii Rossii*, vol. 2. Novosibirsk: Izd. IAE SO RAN, pp. 476–477.

Medvedev V.E. 2005

Neoliticheskiye kultury Nizhnego Priamurya. In *Rossiyskiy Dalniy Vostok v drevnosti i srednevekovye: Otkrytia, problemy, gipotezy*. Vladivostok: Dalnauka, pp. 234–267.

Molodin V.I., Mylnikova L.N., Ivanova D.P. 2014

A morphological analysis of vessels from Middle Bronze age (early 2nd millennium BV) burials at Vengerovo, in the Irtysh forest-steppe. *Archaeology, Ethnology and Anthropology of Eurasia*, No. 42 (2): 44–66.

Moreva O.L. 2003

Otnositelnaya periodizatsiya keramicheskikh kompleksov boismanskoy arkheologicheskoy kultury pamyatnika Boismana-2. In *Problemy arkheologii i paleoekologii Severnoy, Vostochnoy i Tsentralnoy Azii: Materialy Mezhdunar. konf. "Iz veka v vek", posvyashch. 95-letiyu so dnya rozhdeniya akademika A.P. Okladnikova i 50-letiyu Dalnevostochnoy arkheologicheskoy ekspeditsii RAN. Vladivostok, 11–25 sent. 2003 g*. Novosibirsk: IAE SO RAN, pp. 172–175.

Moreva O.L., Batarshev S.V. 2009

Kulturniye kontakty v neolite Primorya i Priamurya (po rezultatam issledovaniya keramiki). In *Kulturnaya khronologiya i drugiye problemy v issledovaniyakh drevnostey vostoka Azii*. Khabarovsk: Khabar. krayevoy krayeved. muzey, pp. 147–152.

Moreva O.L., Batarshev S.V., Popov A.N. 2008

Keramicheskiy kompleks epokhi neolita s mnogosloynogo pamyatnika Vetka-2 (Primorye). In *Neolit i neolitizatsiya basseyna Yaponskogo morya: Chelovek i istoricheskiy landshaft: Materialy Mezhdunar. arkheol. konf., posvyashch. 100-letiyu so dnya rozhdeniya A.P. Okladnikova (17–18 marta 2008 g.)*. Vladivostok: Izd. Dalnevost. Gos. Univ., pp. 131–160.

Moreva O.L., Popov A.N. 2003

Kulturnaya prinadlezhnost ostrodonnoy keramiki Boismana-2. In *Problemy arkheologii i paleoekologii Severnoy, Vostochnoy i Tsentralnoy Azii: Materialy Mezhdunar. konf. "Iz veka v vek", posvyashch. 95-letiyu so dnya rozhdeniya akademika A.P. Okladnikova i 50-letiyu Dalnevostochnoy arkheologicheskoy ekspeditsii RAN. Vladivostok, 11–25 sent. 2003 g*. Novosibirsk: IAE SO RAN, pp. 176–179.

Mylnikova L.N. 1999

Goncharstvo neoliticheskikh plemen nizhnego Amura (po materialam poseleniya Kondon-Pochta). Novosibirsk: Izd. IAE SO RAN.

Mylnikova L.N. 2014

Studying the forms of ancient ware: Theoretical and practical aspects. *Archaeology, Ethnology and Anthropology of Eurasia*, No. 42 (2): 31–43.

Mylnikova L.N., Selin D.V. 2015

Kompleks keramiki andronovskoy kultury Yelovskogo II mogilnika: Morfologicheskiy analiz (vozmozhnosti metodiki V.F. Geninga). *Vestnik Kemerovskogo gosudarstvennogo universiteta*, vol. 6 (2): 114–122.

Nordström H.A. 1972

Cultural Ecology and Ceramic Technology: Early Nubian Cultures from the Fifth and the Fourth Millennia B.C. Stockholm: Almqvist & Wiksell.

Orton C., Hughes M. 2013

Pottery in Archaeology. Cambridge: Cambridge Univ. Press. (Cambridge manuals in archaeology).

Popov A.N. 2006

Sredniy neolit v Primorye. In *Sovremenniye problemy arkheologii Rossii*, vol. I. Novosibirsk: Izd. IAE SO RAN, pp. 302–304.

Popov A.N., Chikisheva T.A., Shpakova E.G. 1997

Boismanskaya arkheologicheskaya kultura Yuzhnogo Primorya (po materialam mnogosloynogo pamyatnika Boismana-2). Novosibirsk: Izd. IAE SO RAN.

Shepard A.O. 1965

Ceramics for the Archaeologist. Washington: Carnegie Institution of Washington.

Shevkomud I.Y. 2003

Kondonskaya neoliticheskaya kultura na Nizhnem Amure: Obshchiy obzor. In *Problemy arkheologii i paleoekologii Severnoy, Vostochnoy i Tsentralnoy Azii: Materialy Mezhdunar. konf. "Iz veka v vek", posvyashch. 95-letiyu so dnya rozhdeniya akademika A.P. Okladnikova i 50-letiyu Dalnevostochnoy arkheologicheskoy ekspeditsii RAN. Vladivostok, 11–25 sent. 2003 g*. Novosibirsk: Izd. IAE SO RAN, pp. 214–218.

Shevkomud I.Y., Kuzmin Y.V. 2009

Khronologiya kamennogo veka Nizhnego Priamurya (Dalniy Vostok Rossii). In *Kulturnaya khronologiya i drugiye problemy v issledovaniyakh drevnostey vostoka Azii*. Khabarovsk: Khabarov. krayevoy krayeved. muzey, pp. 7–46.

Tsetlin Y.B. 2012

Drevnyaya keramika: Teoriya i metody istoriko-kulturnogo podkhoda. Moscow: Izd. IA RAN.

Zhushchikhovskaya I.S. 1997

Migratsii i kulturniye kontakty v drevnosti v kontekste traditsiy proizvodstva. *Vestnik DVO RAN*, No. 1: 48–53.

Zhushchikhovskaya I.S. 1998

Keramika poseleniya Boismana 1. In *Perviye rybolovy v zalive Petra Velikogo: Priroda i drevniy chelovek v bukhte Boismana*. Vladivostok: DVO RAN, pp. 123–196.

Zhushchikhovskaya I.S. 2003

Arkheologicheskaya keramika kak indikator migratsii na yuge Dalnego Vostoka. In *Problemy arkheologii i paleoekologii Severnoy, Vostochnoy i Tsentralnoy Azii: Materialy Mezhdunar. konf. "Iz veka v vek", posvyashch. 95-letiyu so dnya rozhdeniya akademika A.P. Okladnikova i 50-letiyu Dalnevostochnoy arkheologicheskoy ekspeditsii RAN. Vladivostok, 11–25 sent. 2003 g*. Novosibirsk: IAE SO RAN, pp. 125–127.

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